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Assessment of the predation impact of the stingray *Dasyatis akajei* on the population of the ghost shrimp *Nihonotrypaea harmandi* on an intertidal sandflat

On the Tomioka Bay intertidal sandflat located in Tachibana Bay, west of Ariake Sound, a population explosion of the ghost shrimp *N. harmandi* that occurred within a few years from 1979 led to the substrate destabilization, resulting in the local extinction of many benthic species. Since 1995, however, the ghost shrimp population density has been on a decline. One possible factor responsible for this is predation and sediment disturbance by the stingray *D. akajei*, whose pits have suddenly become abundant since 1995. This study assessed such predation/disturbance impact for a year by examining (1) biweekly or monthly changes in the density of pits formed per day, (2) rate of reduction in ghost shrimp density per pit and day during the summer season, when the highest occurrence of pits was recorded, (3) shrimp size-dependent susceptibility to pit formation, especially in relation to shrimp burrow depths, and (4) gut contents of stingrays. It was estimated that 6 to 19% of the ghost shrimp population had been reduced by the stingray by the end of the summer season. Assuming this rate to be constant in the period from 1995 to 2001, the simulated decline of the ghost shrimp population well conformed to the actual data.